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L. L. Merrill
J. L. Crouch
C. J. Thomsen
J. M. Guimond

Naval Health Research Center

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Child Maltreatment

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Risk for Intimate Partner Violence and Child Physical Abuse: Psychosocial Characteristics of Multirisk Male and Female Navy Recruits

Lex L. Merrill
Naval Health Research Center

Julie L. Crouch
Cynthia J. Thomsen
Jennifer M. Guimond
Northern Illinois University

This study examined psychosocial characteristics of individuals at risk for perpetrating both intimate partner violence (IPV risk) and child physical abuse (CPA risk). The sample consisted of 775 female and 592 male Navy recruits. The psychosocial variables assessed included symptoms of dysphoria, posttraumatic stress, self-dysfunction, alcohol-related problems, and drug use. IPV risk and CPA risk were positively associated with approximately 9% of the total sample considered multirisk (i.e., positive for both IPV risk and CPA risk). Results of regression analyses revealed that patterns of predictors (demographic and psychosocial variables) for IPV-risk only and CPA-risk only differed with multirisk individuals characterized by the combined predictors of both types of violence risk. Nearly half (47.2%) of the multirisk individuals were characterized by multiple (i.e., two or more) clinical elevations on the psychosocial characteristics assessed.

Keywords: *intimate partner violence; child physical abuse*

Intimate partner violence (IPV) and child physical abuse (CPA) have been estimated to co-occur at rates ranging from 30% to 60% in selected populations with a base rate of co-occurrence of approximately 6% in the general population (for reviews, see Appel & Holden, 1998; Edleson, 1999b). Despite substantial

rates of co-occurrence, historically, prevention/intervention services targeting perpetrators of IPV and CPA have operated largely independent of one another. Recently, however, collaborative efforts between programs designed to reduce risk for IPV and CPA have received increased attention (e.g., see Edleson, 1999a; O'Leary, Slep, & O'Leary, 2000). Unfortunately, only a modest amount of research is available to guide the integration of these services. The limited research that is available suggests that families characterized by co-occurring IPV and CPA may present with problems (e.g., life stressors, neighborhood violence, parental history of severe punishment) that are similar in nature but greater in magnitude compared to families with only one of these forms of violence (e.g., Shipman, Rossman, & West, 1999). Further, studies that have examined the occurrence of CPA among perpetrators of IPV suggest that higher rates and/or more severe forms of IPV are associated with perpetration of CPA among both men and women (Ross, 1996). Consistent with these findings, families with co-occurring IPV and child maltreatment, compared to families with only child maltreat-

ment, have been judged by professionals as posing a higher risk to children and are more likely to be opened for services (Beeman, Hagemeister, & Edleson, 2001).

Collectively, available research suggests that families with co-occurring IPV and CPA may be among the more challenging cases faced by prevention/intervention professionals. In light of the available findings, it is not surprising that positive outcomes associated with CPA prevention strategies, such as home visitation programs, appear to be attenuated in families in which adult partners are violent toward each other (Eckenrode et al., 2000). Improved effectiveness of prevention services targeting families at risk for both IPV and CPA may depend in part on our ability to gain a clearer understanding of the characteristics of individuals at risk for multiple forms of family violence.

Thus, despite advances in our understanding of the ways families with co-occurring IPV and CPA differ from families with either IPV only or CPA only, much remains to be learned (see Williams, 2003, for additional discussion). For example, relatively little is known about the psychosocial characteristics of individuals who perpetrate both IPV and CPA. In an effort to extend our understanding in this area, Hartley (2002) reviewed records of confirmed child maltreatment cases and classified families as having child maltreatment only (subclassified as CPA only or neglect only) or as child maltreatment cases with co-occurring IPV. It was hypothesized that cases with co-occurring CPA and IPV, compared to cases with only CPA, would include greater numbers of parents with mental health and/or substance-use-related problems.

As expected, Hartley (2002) found that fathers in families in which both CPA and IPV were evident, compared to fathers in families with only CPA, were more likely to be described in case records as having a history of alcohol and/or drug problems and were more likely to be described as using alcohol or drugs at the time of the maltreatment. Contrary to expectations, no other differences were noted with regard to histories of mental health problems in mothers or fathers in families described as exhibiting co-occurring CPA and IPV versus CPA only. A number of study limitations must be noted, however, when interpreting the Hartley findings. For example, reliance on unstandardized interviews and caseworker notes, in the absence of more reliable and valid assessment techniques, may have limited detection of mental health and substance-use problems. As noted by Hartley, additional research on this topic is needed and should include use of standardized assessment strategies for detecting mental health and substance-use problems.

Unfortunately, most studies investigating the psychosocial characteristics associated with IPV and CPA risk have not examined characteristics of multirisk individuals. Indeed, most research on the psychosocial characteristics of individuals who are at risk for IPV (see Holtzworth-Munroe, Meehan, Herron, Rehman, & Stuart, 2000; Holtzworth-Munroe & Stuart, 1994, for reviews) and studies of those at risk for CPA (see Milner & Dopke, 1997, for a review) has been conducted without considering or controlling for the other type of violence risk. Research simultaneously addressing IPV risk and CPA risk would allow for examination of whether individuals at risk for both types of violence differ from those who are at risk for only one type, either qualitatively (e.g., different factors are associated with combined risk for IPV and CPA versus either alone) or quantitatively (e.g., a variable is associated with combined risk for IPV and CPA more strongly than with either alone). Thus, research addressing risk for IPV and CPA concurrently is needed to clarify characteristics of multirisk individuals.

The present study sought to add to this literature by conducting secondary analyses of an existing data set that included standardized assessments of psychosocial characteristics as reported by a sample of young adults with varying levels of IPV risk and CPA risk. Although psychometrically sound questionnaires have been developed for assessing CPA risk (e.g., Milner, 1986), no such tools are available to assess IPV risk. In the absence of a well-developed risk assessment scale for IPV, the present study used self-reported history of ever having perpetrated severe IPV as an indicator of risk for future perpetration of IPV. Although many factors influence continuation or cessation of IPV, it is generally accepted that the use of severe physical aggression against an intimate partner increases risk of subsequent IPV (for a review, see Holtzworth-Munroe et al., 1995).

The psychosocial characteristics examined in the present study included symptoms of dysphoria, posttraumatic stress, self-dysfunction, alcohol-related problems, and drug use. Although each of these aspects of psychosocial functioning has been found in previous research to be significantly associated with IPV and/or CPA risk (for reviews, see Milner & Dopke, 1997; Riggs, Caulfield, & Street, 2000), no study to date has examined each of these characteristics among multirisk individuals. Given that families in which both IPV and CPA are present report high levels of life stressors (Shipman et al., 1999), it follows that multirisk individuals may experience high levels of dysphoric symptoms (i.e., depression, anxiety, anger). Also, given that families with co-occurring IPV

and CPA tend to experience relatively high levels of violence exposure (including violence in the family of origin, neighborhood, and/or current relationship) (Ross, 1996; Shipman et al., 1999), it is likely that multirisk individuals may exhibit high levels of symptoms of posttraumatic stress and/or self-dysfunction (e.g., impaired self-reference, maladaptive tension reduction behaviors) (Briere, 1995).

Problems associated with alcohol use have been implicated in both IPV and CPA risk (for a review, see Leonard, 2002) with some evidence suggesting that alcohol use by perpetrators of IPV may increase the risk of CPA (Suh & Abel, 1990). Previous analyses of the data set examined in the present study (Merrill, Hervig, & Milner, 1996) indicated that alcohol problems were modest predictors of IPV (after controlling for CPA risk) and CPA risk (after controlling for IPV). However, alcohol problems among multirisk individuals were not examined. Further, Merrill et al. (1996) did not examine the associations between drug use and IPV risk and/or CPA risk. By assessing alcohol-related problems and drug use separately, the present study attempted to examine the unique associations between alcohol problems, drug use, IPV, and/or CPA risk.

In the present study, all psychosocial functioning variables (i.e., dysphoria, posttraumatic stress, self-dysfunction, alcohol abuse, and drug use) were assessed using standardized questionnaires that were part of a larger survey. Respondents included a large nonclinical sample of male and female U.S. Navy recruits. The study hypotheses included the following:

Hypothesis 1: IPV risk and CPA risk would be positively associated.
Hypothesis 2: Each of the psychosocial characteristics assessed (dysphoria, posttraumatic stress, self-dysfunction, alcohol-related problems, and drug use) would be positively associated with both IPV risk and CPA risk.
Hypothesis 3: Because of the limited research available, the regression analyses conducted to examine the relative importance of the psychosocial characteristics in predicting each pattern of violence risk (IPV-risk only, CPA-risk only, multirisk) were considered exploratory.
Hypothesis 4: Multirisk individuals, relative to the other violence-risk groups (i.e., low risk, IPV-risk only, and CPA-risk only), would report the highest rates of clinically significant dysphoric symptoms, posttraumatic stress symptoms, self-dysfunction, alcohol-related problems, and drug use.
Hypothesis 5: Multirisk individuals, relative to the other violence-risk groups (i.e., low risk, IPV-risk only, and CPA-risk only), would have the highest rates of multiple (two or more) clinical elevations across the psychosocial characteristics assessed.

METHOD

Participants

Participants were selected from a sample of 3,765 U.S. Navy recruits who completed surveys at the Recruit Training Command in Orlando, Florida, between January and April 1994. Participants were excluded from the sample if they had invalid profiles according to the validity indexes associated with two of our measures (described below; $n = 1,437$) or if they provided incomplete data for any of the study measures ($n = 961$). This resulted in a final sample of 1,367 recruits (775 women, 592 men).[1]

Respondents were young adults, ranging in age from 17 to 34 years, with more than three quarters between the ages of 18 and 21 years ($M = 20.14$, $SD = 2.36$). The majority of participants had completed high school (46%) or had some college (36%); the remainder had less than a high school education (3%), a GED (9%), or a college degree (6%). The majority of respondents were White (75%), with the remainder being African American (14%), Hispanic (6%), or other (5%). In terms of socioeconomic status (SES; assessed in terms of yearly income in the family of origin), 39% reported incomes of $25,000 or less, 42% reported incomes between $25,000 and $50,000, and 19% reported incomes greater than $50,000. Most respondents were single (88%), with 8% married and 4% other. Approximately one in five (21%) participants reported that they had one or more children in the home.

Test Instruments

IPV risk. Risk of IPV perpetration was assessed using the intimate partner version of the Conflict Tactics Scale (CTS, Form A) (Straus, 1979, p. 87). The CTS is a self-report survey instrument designed to assess behaviors used to resolve conflicts in relationships (for evidence supporting the reliability and validity of the CTS, see Straus, 1990, 1996). Respondents were asked to indicate how frequently they had used each of 18 different conflict resolution techniques with a romantic partner (where a romantic partner was defined as a person the respondent was dating, seeing, going steady with, or married to). Ratings were made on a 5-point scale (0, 1, 2-5, 6-10, more than 10). Of the 18 CTS items, only the five items comprising the Severe Physical Violence subscale were used in the present study. These items asked whether the respondent had "hit (or tried to hit) the other person, but not with anything;" "hit (or tried to hit) the other person with something hard;" "kicked, bit, or hit with a fist;" "beat the other person up;" and "threatened the other person with a knife or gun." A continuous index of fre-

quency of IPV was computed by summing responses to the five items assessing severe physical violence (α = .76). Respondents who reported ever having engaged in any behavior on the Severe Physical Violence subscale were classified as at risk for IPV; those who denied using any of the forms of severe physical violence against a partner were classified as at low risk for IPV.

CPA risk. We assessed CPA risk with the Physical Abuse Scale of the Child Abuse Potential (CAP) Inventory. The CAP is a 160-item, forced-choice (i.e., agree or disagree), self-report questionnaire designed to screen for child physical abuse risk (Milner, 1986, 1994). Scores on the Physical Abuse Scale are computed as a weighted sum of 77 items with scores ranging from 0 to 486. The CAP also contains three validity scales (Lie, Random Response, and Inconsistency), which were used to identify cases that were faking good, faking bad, or responding randomly. Respondents with invalid profiles were excluded from subsequent analyses with one exception: Consistent with recommendations in the CAP interpretive manual (Milner, 1990), respondents with elevated faking-good indexes who scored as at risk for CPA were retained in the sample.

Numerous studies report construct validity data for the CAP Inventory Physical Abuse Scale (see Milner, 1994; Milner & Crouch, 1999). Individual classification rates based on discriminant analysis of child physical abusers and matched comparison parents are in the mid-80% to low-90% range (e.g., Milner, 1986; Milner, Gold, & Wimberley, 1986). Data on the specificity of the CAP Inventory Physical Abuse Scale in various low-risk groups indicate 100% correct classification of nurturing foster parents, low-risk mothers, and nurturing mothers (Milner, 1986, 1989). Prospective research has revealed a significant association between CAP Inventory abuse scores and subsequent physical child abuse (Milner, Gold, Ayoub, & Jacewitz, 1984). Even when CAP scores are obtained before a child is born, they predict later negative child outcomes such as developmental delays (Dukewich, Borkowski, & Whitman, 1999) and morbidity (Zelenko et al., 2001).

Previous research has documented adequate test-retest reliabilities for the CAP Inventory Physical Abuse Scale in general population samples (.91 for 1-day, .90 for 1-week, .83 for 1-month, and .75 for 3-month intervals; Milner, 1986). Internal consistency estimates for the CAP Inventory Physical Abuse Scale have ranged from .92 to .95 for the general population and maltreating parents (Milner, 1986). In the present study, the internal consistency of the CAP

Inventory Physical Abuse Scale was .92. Using a cut score suggested by Milner (1986), respondents who obtained physical abuse scores greater than or equal to 215 were defined as high in CPA risk; those with scores below 215 were defined as low in CPA risk.

Dysphoria, posttraumatic stress, and self-dysfunction. The Trauma Symptom Inventory (TSI) (Briere, 1995) was used to assess symptoms of dysphoria, posttraumatic stress, and self-dysfunction. The TSI consists of 100 items, and respondents were asked to rate how frequently they experienced each symptom in the last 6 months (0 = *never,* 3 = *often*). The TSI includes three validity scales (Atypical Response, Response Level, Inconsistent Response), which were used to identify respondents with invalid responses. In addition, the TSI yields scores on 10 clinical scales, each computed by summing eight or nine scale items. The two TSI scales that addressed sexual issues (Sexual Concerns and Dysfunctional Sexual Behavior) were not utilized in the present study. For the remaining scales (Anxious Arousal, Depression, Anger/Irritability, Intrusive Experiences, Defensive Avoidance, Dissociation, Impaired Self-Reference, and Tension Reduction Behavior), raw scores were converted to *t*-scores (M = 50, SD = 10) using general population norms from the TSI manual. Internal consistency estimates based on responses from the present study's sample for the eight clinical scales considered here were between .84 and .89 with the exception of Tension Reduction Behavior Scale, which yielded a slightly lower alpha of .77. These values are similar to those reported by Briere (1995).

We used the clinical scales of the TSI to compute scores representing Dysphoria, Posttraumatic Stress, and Self-Dysfunction. Briere (1995, pp. 34-37) provided evidence that the 10 clinical scales of the TSI represent these three underlying factors. However, he allowed the same scale to define multiple latent constructs (i.e., Anger/Irritability defined both Dysphoria and Self-Dysfunction and Impaired Self-Reference defined both Posttraumatic Stress and Self-Dysfunction). To avoid redundancy between the three factors, in the present study we required that each TSI scale represent only one of the latent dimensions. Therefore, we examined a model in which Dysphoria was assessed by three scales (Anger/Irritability, Anxious Arousal, and Depression), Posttraumatic Stress was assessed by three scales (Intrusive Experiences, Defensive Avoidance, and Dissociation), and Self-Dysfunction was assessed by two scales (Impaired Self-Reference and Tension Reduction Behavior). A confirmatory factor analysis testing the hypothesized factor structure in the pres-

ent sample revealed a good fit with two minor modifications (the errors of Intrusive Experiences and Defensive Avoidance were allowed to correlate as were the errors of Anger/Irritability and Tension Reduction Behavior). All factor loadings were strong and significant, ranging from .68 to .90. Moreover, although the chi-square goodness-of-fit test was significant, $\chi^2(df = 15, N = 1,367) = 74.61$, $p < .001$, other fit indexes indicated good model fit, adjusted goodness-of-fit index (AGFI) = .97, nonnormed-fit index (NNFI) = .98, root mean square error of approximation (RMSEA) = .05. Indexes of Dysphoria, Posttraumatic Stress, and Self-Dysfunction were therefore computed by averaging the t-scores for the constituent scales. As recommended by Briere, t-scores of 65 or greater were interpreted as elevated (i.e., clinically significant).

Alcohol problems. Alcohol problems were assessed using the Michigan Alcoholism Screening Test (MAST), a questionnaire designed to assess lifetime experience of alcohol-related problems (Brady, Foulks, & Childress, 1982; Selzer, 1971). The MAST consists of 24 yes/no items; total scores are derived as a weighted sum of responses with higher scores representing greater problems with alcohol. In the present study, two items that asked whether the respondent was considered (by self or others) to be a "normal drinker" were not used in computing MAST scores. Previous research (Alexander & Mangelsdorff, 1994) has shown that these items, because of their ambiguity, tend to produce erroneously high MAST scores. Thus, MAST scores were computed using 22 scale items. Respondents who indicated, on a separate item, that they do not drink were assigned a MAST score of zero. Previous research has supported the reliability and validity of the MAST (see Storgaard, Nielsen, & Gluud, 1994). In the present study, the modified 22-item MAST had an internal consistency of .77. According to Seltzer (1971), scores of 5 or higher on the MAST are indicative of alcoholism. Despite the fact that we used a shortened version of the MAST, in the present study we used this cutoff to designate individuals with alcohol problems.

Drug use. Respondents were classified as drug users if they reported any use of marijuana, cocaine, or amphetamines in the past year. To explore the possibility that some drug users were misclassified because of the limited number of drugs queried, we examined patterns of drug-use classification in a separate sample of more than 10,000 male and female Naval recruits for whom use of 10 different drugs (including marijuana, cocaine, amphetamines, PCP, LSD, tranquilizers, barbituates, heroin, inhalants, and designer drugs)

was assessed. Only 0.6% (61/10,522) of respondents classified as drug users based on the 10-item assessment were missed when classified using only the marijuana, cocaine, and amphetamine items. Thus, the vast majority (99.4%) of drug users identified using the 10-item drug assessment were also detected through use of only the marijuana, cocaine, and amphetamine items.

Procedure

The measures used in the present study were part of a more extensive survey package administered to Naval recruits during their first week of basic training. Potential participants were read a detailed description of the study, and those who agreed to participate were given a Privacy Act statement and informed-consent form. The voluntary nature of participation in the study was explained and procedures for ensuring anonymity were described. Participants were told that they could "leave blank any section or questions that (you) do not want to answer" and that they were "free to stop at any time before completing the survey."

RESULTS

Analytic Strategy

All variables in the following analyses were coded categorically (e.g., present/not present, elevated/not elevated). Demographic variables with multiple levels were dummy coded with the most frequent category (e.g., single for marital status, White for ethnicity) serving as the reference category. Although some loss of information resulted from this treatment of the data, the use of categories was believed to enhance interpretation of the clinical relevance of the findings. Hierarchical log-linear analysis was used to examine the association between IPV risk and CPA risk. Next, a series of logistic regressions were performed to examine whether each psychosocial functioning variable was independently associated with either of the two forms of violence risk (i.e., IPV risk and CPA risk). The logistic regression analyses did not, however, examine the relative predictive power across psychosocial functioning variables for mutually exclusive violence-risk groups, nor were demographic factors taken into account. Therefore, the final set of analyses involved polytomous logistic regressions that examined which of the psychosocial and demographic variables were the best predictors of membership in mutually exclusive violence-risk groups (IPV-risk only, CPA-risk only, multirisk group). To offset the increased risk of Type I error

due to the large number of statistical tests being performed and to compensate for the high level of power due to the large sample size, alpha was set at a relatively conservative level (.01).

Association Between IPV Risk and CPA Risk

Overall, IPV risk was noted in 22% of participants (total sample: $M = 0.79$, $SD = 2.09$), whereas 31% of respondents were classified as being at risk of CPA perpetration (total sample: $M = 166.09$, $SD = 95.88$). There was a significant association between IPV risk and CPA risk, although the association was relatively weak, $\phi = .11$, $p < .001$. Those at risk for one type of violence, compared to those at low risk for that type of violence, were nearly twice as likely to be classified as at risk for the other form of violence, odds ratio = 1.73, confidence interval$_{99\%}$ = 1.22 to 2.45, $\chi^2(1, N = 1,367) = 16.84$, $p < .001$.

To examine the relations between demographic variables and the two types of violence risk and to examine whether the association between IPV risk and CPA risk was moderated by any demographic factors, a hierarchical log-linear analysis was conducted. The analysis included IPV risk, CPA risk, and seven demographic variables (gender, age, education level, ethnicity, SES, marital status, and presence of children in the home). CPA risk was significantly associated with only one demographic variable, SES; lower family income was associated with higher CPA risk, $\chi^2_{partial}(2, N = 1,367) = 9.46$, $p < .01$. Three demographic variables emerged as significant predictors of IPV risk: gender, $\chi^2_{partial}(1, N = 1,367) = 64.77$, $p < .001$; ethnicity, $\chi^2_{partial}(3, N = 1,367) = 23.59$, $p < .001$; and marital status, $\chi^2_{partial}(2, N = 1,367) = 14.21$, $p < .001$. Women (31%) were more likely than men (11%) to report IPV histories. African Americans (41%) were more likely than Hispanics (24%) or Whites or those of other ethnicities (19%) to report IPV histories. Single respondents (20%) were less likely to report IPV histories than were married (38%) or other (34%) respondents.

Importantly, the log-linear analysis revealed that the association between IPV risk and CPA risk remained significant after controlling for potential confounding factors, $\chi^2_{partial}(1, N = 1,367) = 11.30$, $p < .001$. Moreover, the strength of the association between the two types of violence risk did not vary as a function of any of the demographic characteristics examined as indicated by the lack of significant 3-way interactions modifying the interaction of CPA risk and IPV risk (all $ps < .23$).

Associations Between Psychosocial Characteristics, IPV Risk, and CPA Risk

In the total sample, rates of elevations on the Dysphoria (total sample: $M = 51.17$, $SD = 8.15$), Posttraumatic Stress (total sample: $M = 53.21$, $SD = 9.19$), and Self-Dysfunction (total sample: $M = 55.10$, $SD = 9.88$) Scales were 7.7%, 13.0%, and 16.1%, respectively. Eight percent of respondents reported regular drug use, and 26% were classified as having alcohol-related problems based on their responses to the MAST (total sample: $M = 3.37$, $SD = 4.96$).

The next set of analyses examined the associations between psychosocial characteristics (dysphoria, posttraumatic stress, self-dysfunction, alcohol problems, and drug use) and each type of violence risk (i.e., IPV risk, CPA risk). For compatibility with previous research (in which IPV risk/CPA risk has typically been examined without controlling for CPA risk/IPV risk), we first examined the predictors of each type of violence risk without regard to the presence or absence of the other type of violence risk. Thus, we conducted separate analyses to examine whether our predictor variables were associated with IPV risk and whether they were associated with CPA risk. Each of these analyses was conducted in two ways. First we examined the zero-order associations of each psychosocial variable with IPV risk (CPA risk). Next we examined the partial associations of each psychosocial variable with IPV risk (CPA risk) controlling for the other predictors by simultaneously entering the full set of predictors in a logistic regression analysis. Results of these analyses for IPV risk and CPA risk are provided in Tables 1 and 2, respectively.

Inspection of Table 1 reveals that, when the predictors were considered independently, four of the five psychosocial functioning variables were positively associated with IPV risk. Only dysphoria was not significantly associated with IPV risk (although this effect trended toward significance, $p = .012$). As shown in Table 2, dysphoria, posttraumatic stress, and self-dysfunction symptoms were all positively associated with CPA risk. Alcohol problems and drug use were not significantly associated with CPA risk, although these variables trended toward positive (zero-order) associations with CPA risk (alcohol problems, $p = .07$; drug use, $p = .06$). Although some of the associations were only trends, the overall pattern of zero-order associations indicated that elevations on each of the psychosocial variables examined were associated with IPV risk and CPA risk.[2]

Examination of the partial correlations (see Tables 1 and 2) revealed that only alcohol problems remained significantly associated with IPV risk when

TABLE 1:   Results of Logistic Regressions Predicting Intimate Partner Violence (IPV) Risk From Psychosocial Characteristics

Predictor	IPV Risk—Independent			IPV Risk—Partial		
	b	SE	Odds Ratio	b	SE	Odds Ratio
Dysphoria	0.55	0.21	1.73	0.00	0.26	0.99
Posttraumatic stress	0.72**	0.17	2.05	0.46	0.21	1.59
Self-dysfunction	0.66**	0.16	1.93	0.29	0.20	1.34
Alcohol problems	0.64**	0.13	1.90	0.50**	0.14	1.66
Drug use	0.71*	0.21	2.02	0.49	0.22	1.63

*$p < .01$. **$p < .001$.

TABLE 2:   Results of Logistic Regressions Predicting Child Physical Abuse (CPA) Risk From Psychosocial Characteristics

Predictor	CPA Risk—Independent			CPA Risk—Partial		
	b	SE	Odds Ratio	b	SE	Odds Ratio
Dysphoria	3.07**	0.31	21.57	1.73**	0.34	5.65
Posttraumatic stress	2.03**	0.18	7.65	0.89**	0.22	2.44
Self-dysfunction	2.53**	0.17	12.59	1.85**	0.20	6.41
Alcohol problems	0.23	0.13	1.26	–0.21	0.16	0.53
Drug use	0.38	0.20	1.47	0.04	0.25	1.04

**$p < .001$.

all psychosocial characteristics were considered simultaneously. For CPA risk, partial correlations revealed that dysphoria, posttraumatic stress, and self-dysfunction were each independently associated with CPA risk.

Predicting Violence-Risk Type From Psychosocial Characteristics

The next set of analyses examined whether the demographic and psychosocial predictors of combined IPV risk and CPA risk (i.e., multirisk) differed from those of IPV-risk only or CPA-risk only. More specifically, these analyses concurrently examined the associations between demographic factors and psychosocial characteristics (predictor variables) and mutually exclusive violence-risk groups. Polytomous logistic regressions were used to examine the best predictors of membership in three mutually exclusive violence-risk groups (IPV-risk only, $n = 182$; CPA-risk only, $n = 301$; and multirisk, $n = 125$) compared to the group of respondents at low risk for both types of violence (i.e., low risk, $n = 759$).

Table 3 lists the regression coefficients and odds ratios for the variables that significantly differentiated each violence-risk group from the low-risk group. With regard to IPV-risk only, gender was the only significant demographic predictor. Being female was associated with increased odds of being a member of the IPV-risk only (versus the low-risk) group. Of the psychosocial characteristics, only alcohol problems

were predictive of membership in the IPV-only (versus the low-risk) group. With regard to CPA-risk only, SES was the only significant demographic predictor with lower SES associated with membership in the CPA-risk only (versus the low-risk) group. Elevated dysphoria, posttraumatic stress, and self-dysfunction symptoms each independently increased the odds of membership in the CPA-risk only (versus the low-risk) group.

Membership in the multirisk (versus the low-risk) group was significantly predicted by lower SES, being female, and four (alcohol problems, dysphoria, posttraumatic stress, and self-dysfunction symptoms) of the five psychosocial functioning variables. These results highlight the fact that multirisk individuals were distinguished from low-risk individuals by the combined set of predictors of CPA risk and IPV risk. The odds ratios associated with these categorical analyses provide intuitive metrics by which to evaluate the magnitude of effects. For example, the strongest effect was associated with self-dysfunction; respondents with elevated self-dysfunction scores were seven times more likely to be at high risk for CPA (regardless of whether they were at risk of IPV) than those who did not have elevated self-dysfunction scores.

To directly compare those at risk for one type of violence to those at risk for both types of violence, an additional polytomous logistic regression analysis was conducted. These analyses examined the best predictors of each type of violence risk by comparing the

TABLE 3:   Significant Predictors From Polytomous Logistic Regression Comparing Violence-Risk Groups to the Low-Risk Group

Predictor	IPV-Risk Only			CPA-Risk Only			Multirisk		
	b	SE	Odds Ratio	b	SE	Odds Ratio	b	SE	Odds Ratio
Dysphoria				1.586**	0.411	4.88	1.765**	0.461	5.84
Posttraumatic stress				1.200**	0.271	3.32	1.264**	0.337	3.54
Self-dysfunction				0.989**	0.251	7.31	1.969**	0.317	7.16
Alcohol problems	1.167**	0.208	3.21				0.706*	0.255	2.03
Low socioeconomic status				0.588*	0.224	1.80	1.110*	0.386	3.04
Female	1.362**	0.210	3.90				1.340**	0.260	3.82

NOTE: Each violence-risk group was compared to the group of respondents at risk for neither type of violence. Only significant effects are tabled. IPV risk = intimate partner violence risk; CPA risk = child physical abuse risk.
*p < .01. **p < .001.

IPV-risk only (n = 182) and CPA-risk only (n = 301) groups to the respondents who were multirisk (n = 125). The results of this analysis indicated that both dysphoria and self-dysfunction differentiated those with IPV-risk only from multirisk respondents, b (SE) = 2.144 (0.660) and 1.607 (0.367), respectively, ps < .001. Among those with IPV risk, respondents with elevated dysphoria and those with elevated self-dysfunction were more likely (odds ratios = 8.54 and 4.99, respectively) to be at risk for CPA. Respondents with CPA-risk only were differentiated from those at risk for both types of violence by gender and alcohol problems, b (SE) = 1.429 (0.273) and 0.836 (0.269), respectively, p < .001. Among respondents at risk for CPA, females and those with alcohol problems were more likely (odds ratios = 4.17 and 2.31, respectively) to also have IPV risk.

Clinical Elevations Within Violence-Risk Groups

To further illustrate the differences between violence groups in term of psychosocial characteristics, Table 4 provides the percentages of respondents in each violence-risk group with elevated dysphoria, posttraumatic stress, self-dysfunction, alcohol problems, and drug use. Inspection of Table 4 reveals that the highest rates of clinically significant elevations in dysphoria, posttraumatic stress, and self-dysfunction occurred in the CPA-risk groups (with and without IPV risk). The highest rates of alcohol problems and drug use were noted among respondents with IPV risk (with and without CPA risk). Noteworthy is the fact that the multirisk group was among those with the highest rates of clinically significant problems across all psychosocial characteristics examined.

The total number of clinically significant elevations per respondent was also calculated (range 0 to 5) thereby allowing for examination of the percentage of respondents in each of the four violence-risk

groups that had multiple (two or more) symptom/problem areas of clinical concern. Nearly half (47.2%) of the multirisk respondents had clinically significant elevations across multiple psychosocial characteristics. Approximately one third (35.9%) of CPA-risk only, 15.8% of IPV-risk only, and 6.5% of the low-risk respondents were characterized by multiple elevations across psychosocial characteristics.

DISCUSSION

Risk for either IPV or CPA nearly doubled the odds of being at risk for the other form of violence in this sample of young adults. Approximately 40% of respondents with IPV risk were also at risk for CPA, whereas nearly 30% of individuals at risk for CPA were at risk for IPV. Within the total sample, approximately 9% of respondents were classified as multirisk, that is, exhibiting risk for both IPV and CPA. These findings help to underscore the need for prevention services capable of responding effectively to the entire range of psychosocial issues associated with both IPV risk and CPA risk.

In the present study, each of the psychosocial characteristics assessed was positively associated with IPV risk (without controlling for CPA risk) and CPA risk (without controlling for IPV risk). When entered as competing predictors of mutually exclusive groups of IPV-risk only and CPA-risk only, different sets of predictors emerged for the two violence-risk groups. More specifically, females and those with alcohol-related problems were more likely to be in the IPV-risk only (versus low-risk) group. A separate set of predictors (elevated symptoms of dysphoria, posttraumatic stress, and self-dysfunction) predicted membership in the CPA-risk only (versus low-risk) group. No demographic or psychosocial characteristics emerged as unique predictors of membership in

TABLE 4:   Percentages of Respondents With Clinically Elevated Scores Across Violence-Risk Groups

Psychosocial Characteristic	Low Risk (n = 759)	IPV-Risk Only (n = 182)	CPA-Risk Only (n = 301)	Multirisk (n = 125)
Dysphoria	1.2[a]	1.6[a]	20.6[b]	24.8[b]
Posttraumatic stress	4.0	11.0	28.6[a]	33.6[a]
Self-dysfunction	4.1	9.3	38.5[a]	44.8[a]
Alcohol problems	21.9[a]	36.8[b]	26.6[a]	36.0[b]
Drug use	5.9[a]	11.0[b]	8.0[a]	14.4[b]

NOTE: Same superscript denotes that groups do not significantly differ (*p*s > .05). IPV risk = intimate partner violence risk; CPA risk = child physical abuse risk.

the multirisk (versus low-risk) group. Rather, predictors of multirisk (versus low-risk) group membership included the combined set of predictors found for the IPV-risk only and CPA-risk only groups. Thus, predictors for the multirisk group were similar in nature but larger in number compared to the IPV-risk only or CPA-risk only groups.

Among multirisk respondents, substantial rates of clinically significant elevations were noted across each of the psychosocial characteristics examined. Nearly 45% of the multirisk individuals reported clinically significant levels of self-dysfunction symptoms. Self-dysfunction symptoms include difficulties with identity and affect regulation including tendencies to act out as a way of managing unpleasant internal states (Briere, 1995). Clinically significant levels of dysphoria, which included symptoms of depression, anxiety, and anger, were common among multirisk individuals with approximately one out of four multirisk respondents having elevated dysphoria scores. Posttraumatic stress symptoms were also prominent among multirisk individuals including intrusive experiences (e.g., nightmares, intrusive images), defensive avoidance, and dissociative symptoms. Approximately one out of three multirisk individuals had elevated posttraumatic stress scores. Alcohol problems were also prevalent within the multirisk group with 36% of multirisk respondents reporting significant problems related to alcohol use.

An important issue to consider regarding the psychosocial characteristics of multirisk respondents, and to some degree of CPA-risk–only respondents, was the comorbidity of problems across the psychosocial characteristics assessed. Nearly half (47%) of the multirisk respondents had two or more elevations across the psychosocial characteristics assessed. In other words, multirisk individuals were likely to be struggling with combinations of symptoms of dysphoria, posttraumatic stress, self-dysfunction,

and/or alcohol problems. Attending to various combinations of symptoms may be important in understanding violence risk. For example, the combination of elevated dysphoria and self-dysfunction (i.e., frequent or intense negative affect combined with poor affect regulation, identity disturbance, and poor coping skills) may increase tendencies to act out as a way of managing distress (Briere, 1995). It has also been suggested that the combination of negative affective states with alcohol use may increase risk for violent behavior (see Leonard, 2002). For example, the association between alcohol use and IPV appears to be moderated by negative affect. That is, alcohol use is more strongly associated with IPV among participants with high levels of negative affect (Leonard & Blane, 1992). In the present study, various combinations of dysphoria, posttraumatic stress, self-dysfunction, and alcohol-related problems were common among multirisk individuals with each of these psychosocial characteristics independently adding to the prediction of membership in the multirisk group versus the low-risk group.

Certain psychosocial characteristics served to distinguish multirisk respondents from IPV-risk only and CPA-risk only respondents. More specifically, IPV-risk respondents who reported clinically significant levels of dysphoria and self-dysfunction were more likely (odds ratios = 8.54 and 4.99, respectively) to be concurrently at risk for CPA. Thus, high levels of dysphoria and self-dysfunction may signal significant risk for CPA among individuals with IPV risk. These results are consistent with findings that the highest rates of CPA risk occur among IPV perpetrators characterized by borderline and dysphoric features (Herron & Holtzworth-Munroe, 2002).

Two factors distinguished CPA-risk only from multirisk individuals. Among CPA-risk respondents, women, compared to men, were 4.17 times more likely to be multirisk. CPA-risk respondents who reported significant problems related to alcohol use were 2.31 times more likely to be multirisk. This latter finding is consistent with previous reports of higher rates of alcohol problems among fathers in families with co-occurring IPV and CPA compared to fathers in families in which only CPA was present (Hartley, 2002).

The present study adds in several ways to our understanding of the psychosocial characteristics of multirisk individuals. Much of the existing research on the characteristics associated with IPV has been limited in that it has focused on treatment-seeking samples of males and has not routinely controlled for CPA risk. Most research on CPA risk has focused on women and has not controlled for concurrent IPV

risk. The present study provided an opportunity to examine the associations between psychosocial characteristics and varying levels of IPV risk and CPA risk in a large nontreatment-seeking sample of men and women. Although examination of gender differences in psychosocial characteristics associated with CPA risk and IPV risk was not a primary focus of the present study, results from supplemental analyses revealed that the associations between psychosocial characteristics, IPV risk, and CPA risk did not vary depending on the gender of the respondent.[3] Another strength of this study was the use of standardized questionnaires to establish IPV risk, CPA risk, and multiple aspects of psychosocial functioning. Assessment of multiple psychosocial characteristics concurrently allowed for examination of the relative importance of each characteristic as it related to different patterns of violence risk.

Despite these strengths, a number of issues are important to consider when interpreting the present findings. The study relied solely on self-report measures; thus, shared method variance may account for some of the association noted between key constructs. Although use of multiple measures and methods in the measurement of the key study constructs would have been desirable, as a secondary analysis of existing data, we were limited to the data available. Also, the study's focus was limited to CPA risk; thus, perpetration of CPA was not directly assessed. The extent to which the pattern of findings for CPA risk generalizes to CPA perpetration remains to be examined. Although CPA perpetration was not directly assessed in the present study, it may be noted that our findings regarding CPA risk directly inform prevention efforts aimed at reducing risk for child maltreatment prior to abuse.

A number of issues related to the IPV-risk classification used in the present study also should be taken into consideration. As described above, the present study used self-reported history of perpetration of severe IPV as an indication of risk for future perpetration of IPV. Data from married couples supports an association between a history of perpetration of severe forms of IPV and subsequent IPV perpetration (see Holtzworth-Munroe et al., 1995, for a review); the extent to which these findings generalize to patterns of IPV perpetration among individuals who are not married remains an empirical question. Further, it is likely that some IPV-risk respondents were misclassified because of underreporting of their violent behavior. Also, respondents who reported less than severe forms of IPV were classified as low risk, although it is likely that some respondents who engaged in milder forms of IPV at the time of the study eventually escalated to severe IPV. It may also be noted that our IPV-risk classification did not attempt to exclude respondents who were currently involved in IPV (i.e., recent perpetration of IPV). For all of these reasons, it is likely that our IPV-risk classification resulted in an unknown degree of both false negative and false positive classifications. It may be noted, however, that in the absence of a psychometrically sound IPV-risk assessment tool, our procedures (i.e., assessing history of IPV as a means of estimating future risk for IPV) are similar to those employed by practitioners in the field attempting to estimate the potential for IPV among service recipients. For example, common practices for assessing the potential for violence include asking respondents how they (or their partner) behave when they are really angry (e.g., see Family Stress Checklist; Orkow, 1985) or use of behaviorally specific questionnaires to assess history of receipt or perpetration of violent behaviors (e.g., see the CTS, Straus, 1979).

Another limitation of the present study is that it examined co-occurrence of IPV and CPA risk within individuals. Thus, the present results do not directly inform us about patterns of functioning in families in which one individual exhibits IPV risk while another exhibits risk for CPA. Also, only a limited number of variables were examined in the present study, and consideration of additional factors (e.g., trauma history, general versus specific forms of hostility, etc.) is needed to further our understanding of common and specific characteristics of IPV-risk only, CPA-risk only, and multirisk individuals. Finally, generalization of the present findings is limited given that the present study excluded large numbers of males and minority participants.

Despite these limitations, the present study adds to an emerging literature on characteristics of individuals with risk for multiple forms of violence. Our findings suggest that the challenge of integrating domestic violence and child abuse prevention services may be exacerbated by the fact that these systems tend to converge around cases in which clinically significant levels of psychosocial symptoms are likely. The limited effectiveness of CPA prevention services in families in which IPV and CPA risk co-occur (Eckenrode et al., 2000) may reflect the fact that multirisk families may be more challenging given the likelihood of multiple conditions that warrant clinical concern. The present findings suggest that services that address self and affect regulation difficulties as well as alcohol-related problems may be important in effectively addressing the psychosocial needs of multirisk individuals.

NOTES

1. Responses to multi-item scales were considered missing if more than 10% of scale items were missing; if fewer than 10% of the items were missing, the missing item(s) were replaced with the respondent's own mean response across the completed items. Respondents with missing data did not differ from those with complete data in terms of the psychosocial functioning or substance-use variables or in terms of scores on intimate partner violence (IPV) risk. However, those with missing data had higher scores on child physical abuse (CPA) risk ($M = 183.36$) than did those with no missing data ($M = 166.09$), $t(2, 665) = 5.70$, $p < .001$. In terms of the demographic variables, respondents with less education were more likely to have missing data than those with more education, $\chi^2(4, N = 2,321) = 16.42$, $p < .001$. In addition, respondents with missing data were more likely to be male (47%) than female (36%), $\chi^2(1, N = 2,328) = 24.90$, $p < .001$, and were more likely to be non-White (52%) than White (36%), $\chi^2(3, N = 2,318) = 52.70$, $p < .001$. Respondents with missing data did not differ from those without missing data on any other demographic variable.

In terms of validity, 819 respondents obtained invalid profiles on the Child Abuse Potential (CAP), 354 obtained invalid profiles on the Trauma Symptom Inventory, and 264 obtained invalid profiles on both measures. Compared to those in the final sample, those with invalid profiles obtained lower scores on the CAP Abuse Scale and on all three measures of psychosocial functioning, $ts \geq 5.70$, $p < .001$. In addition, those who provided invalid profiles were more likely to be male (56%) than female (46%), $\chi^2(1, N = 2,804) = 29.22$, $p < .001$, and more likely to be African American (61%) or Hispanic (58%) or other (56%) than White (48%), $\chi^2(3, N = 2,799) = 33.85$, $p < .001$. In other respects, those with invalid profiles did not differ demographically from those in the final sample.

2. Additional analyses were undertaken to examine the possible impact of missing data on our results. Specifically, we used the full information maximum likelihood (FIML) technique available in *AMOS 4.01* (Arbuckle, 1999; Arbuckle & Wothke, 1999), which uses all available data to estimate parameters using a maximum-likelihood criterion. Although the sample size increased substantially for these analyses (from 1,367 to 2,328), the pattern of effects for predicting CPA risk remained the same: Dysphoria, posttraumatic stress, and self-dysfunction were all significant predictors, whereas alcohol problems and drug use were not. In contrast, whereas only the alcohol problems category was a significant predictor of IPV risk in the analyses reported above, two additional predictors emerged as significant in the FIML analyses: Both posttraumatic stress and self-dysfunction were predictive of IPV risk in the FIML analysis. The emergence of these additional factors as significant is not surprising given the larger sample (i.e., relative to the sample size following list-wise deletion of cases with missing data) and the resulting increased statistical power of the FIML analysis. Moreover, given that all predictors including posttraumatic stress and self-dysfunction were associated with IPV risk at the zero-order levels, the results of the FIML analyses were consistent with previous analyses. Thus, it does not appear that our findings were systematically biased by the exclusion of participants with missing data. However, it is important to bear in mind that no technique for dealing with missing data is unbiased when the data are nonignorably missing (i.e., when values of the variable itself are associated with whether the variable is missing).

3. Supplemental analyses were conducted to examine whether the associations between psychosocial characteristics and IPV risk/CPA risk varied for men and women. More specifically, two logistic regressions were performed (one predicting IPV risk and one predicting CPA risk) with all five psychosocial characteristics entered on the first step and five gender interaction terms (i.e., each psychosocial characteristic by gender) entered on the second step. No gender interaction terms were significantly associated with IPV risk or CPA risk thereby indicating that the associations between the psychosocial characteristics and IPV risk/CPA risk did not significantly vary for men and women.

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Lex L. Merrill, Ph.D., is a research psychologist at the Naval Health Research Center in San Diego, CA.

Julie L. Crouch, Ph.D., is an associate director of the Center for the Study of Family Violence and Sexual Assault at Northern Illinois University.

Cynthia J. Thomsen, Ph.D., is a research associate at the Center for the Study of Family Violence and Sexual Assault at Northern Illinois University.

Jennifer M. Guimond, M.A., is a doctoral candidate in the Department of Psychology at Northern Illinois University.

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Lex L. Merrill, Julie L. Crouch, Cynthia J. Thomsen, & Jennifer M. Guimond

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Naval Health Research Center
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Abstract
This study examined psychosocial characteristics of individuals at risk for perpetrating both intimate partner violence (IPV risk) and child physical abuse (CPA risk). The sample consisted of 775 female and 592 male Navy recruits. The psychosocial variables assessed included symptoms of dysphoria, posttraumatic stress, self-dysfunction, alcoholrelated problems, and drug use. IPV risk and CPA risk were positively associated with approximately 9% of the total sample considered multirisk (i.e., positive for both IPV risk and CPA risk). Results of regression analyses revealed that patterns of predictors (demographic and psychosocial variables) for IPV-risk only and CPA-risk only differed with multirisk individuals characterized by the combined predictors of both types of violence risk. Nearly half (47.2%) of the multirisk individuals were characterized by multiple (i.e., two or more) clinical elevations on the psychosocial characteristics assessed.

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